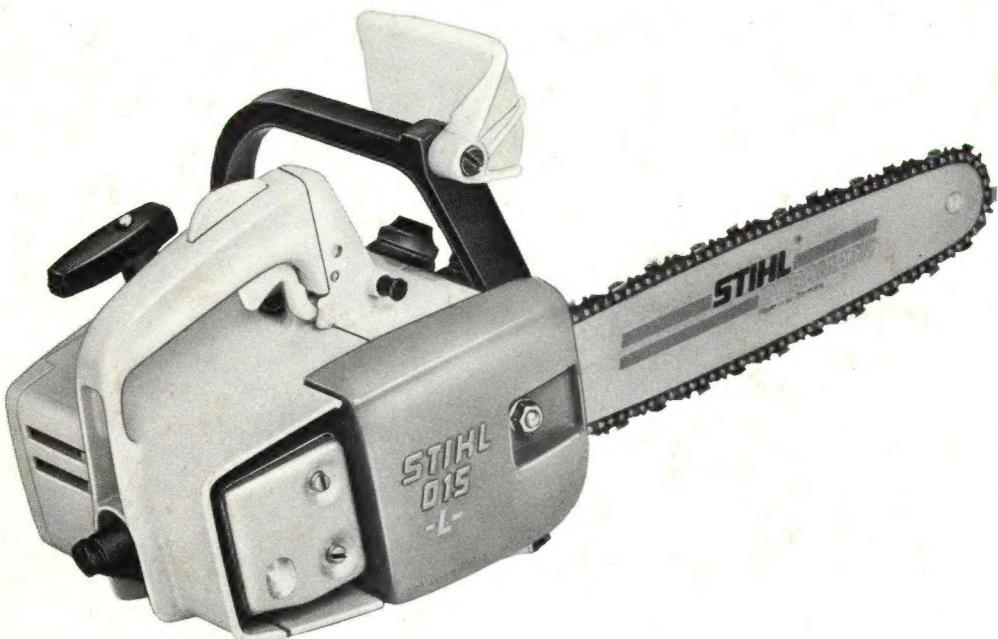




# Power Chain Saw

## STIHL 015, 015 L, 015 L electronic



**Attention!** The use of chain saws may be riskful. Read and follow carefully the operating and safety instructions of your owner's manual.





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## **Instruction Manual**

# **Power Chain Saw STIHL 015, 015 L, 015 L electronic**



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## Preface



Our experience of many years in the production of professional chain saws has been taken into consideration when designing the chain saws of model STIHL 015 and 015 L electronic. These saws incorporate all advantages of a professional saw except that they are smaller and handier.

The STIHL 015 is equipped without throttle trigger inter-lock and without hand guard.

The STIHL 015 L electronic, however, comes as standard equipment with the successful throttle trigger inter-lock which avoids unintentional throttling and with

a hand guard as well as with a very efficient low-noise muffler. On the following pages of this instruction booklet you will find valuable hints for maintenance and service of the chain saw.

Before you start to work with your saw please read this instruction manual carefully. You will find in it valuable hints and instructions on how to operate your STIHL 015 or 015 L electronic correctly.

## Specifications

We reserve the right to make changes in design whenever it is deemed necessary or an advantage.

### Engine

STIHL single cylinder two-stroke engine

Piston displacement: 1.95 cu. in. (32 cm<sup>3</sup>)

Cylinder bore: 1.52 in. (38 mm)

Piston stroke: 1.12 in. (28 mm)

Power: 1.8 HP (DIN) at 8500 r.p.m.

### Ignition system 015

Flywheel magneto

Breaker point gap: .014 to .016 in. (0.35–0.4 mm)

### Ignition System 015 L electronic:

Transistorized electronic ignition

Ignition timing: .088 in. (2.2 mm) before top dead center

Spark plug: Bosch WKA 175 T 6  
Spark gap .02 in. (0.5 mm)

### Fuel system

All position HDC 17 Walbro carburetor with integral fuel pump

Air filter: Large size felt pad

Fuel tank capacity: .7 US pts. (0.33 l)

Fuel mixture: Mixing ratio 1:25 when using SAE 30 motor oil; Mixing ratio 1:40 when using STIHL-two-stroke motor oil

### Weight

With 10 in. (25 cm) bar and chain:

015 about 8.2 lbs (3.7 kgs)

015 L about 8.6 lbs (3.9 kgs)

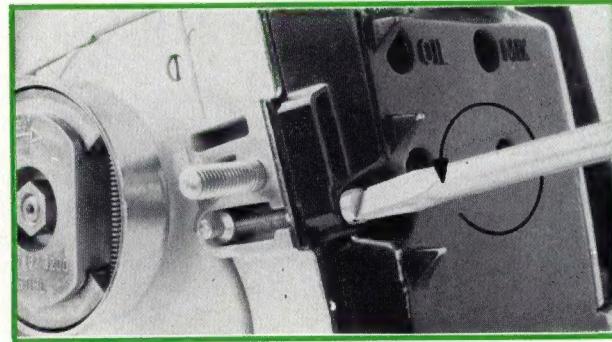
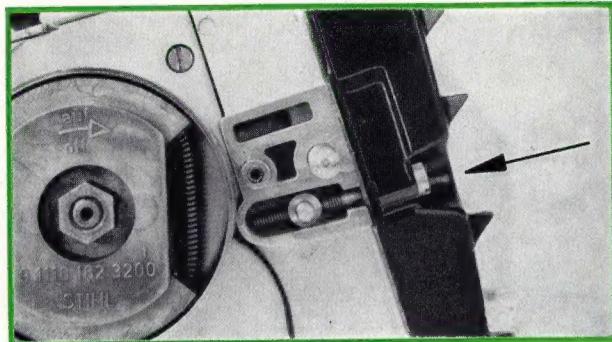
## Summary of instructions

1. Fill fuel tank with fuel mixture and oil tank with chain lubricating oil.
2. Mount bar and chain.
3. Close choke shutter and turn on ignition switch. To do so fully turn choke shutter lever in direction of arrow (START) and slide ignition stop switch in direction of spark plug also as far as it will go.
4. Lock throttle trigger in half throttle position: On the model 015 L electronic fully depress throttle trigger interlock with the ball of your left thumb then depress the half throttle lock button with your thumb. On model 015 just depress half throttle button.
5. Start engine with choke shutter closed until engine fires once. Then fully open choke shutter by turning it into horizontal position. Even if engine should not start on the next pull, continue. If you don't open the choke shutter the combustion chamber will flood and the engine cannot be started.
6. Check to see if chain is being properly lubricated.
7. Make a few test cuts.
8. To stop the engine slide ignition stop switch fully forward in the direction of the arrow which points to "STOP".

## Installation of bar and chain

Top: Chain tensioning adjustment.

Bottom: Positioning the bolt of the tensioning nut.



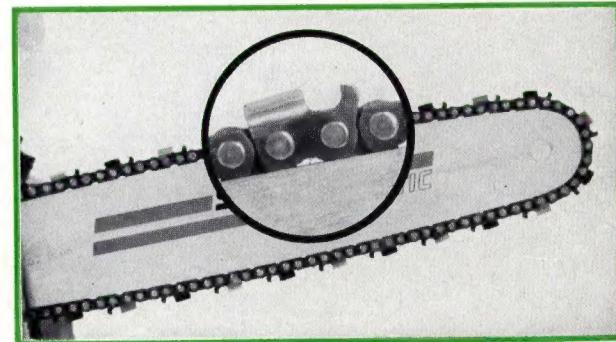
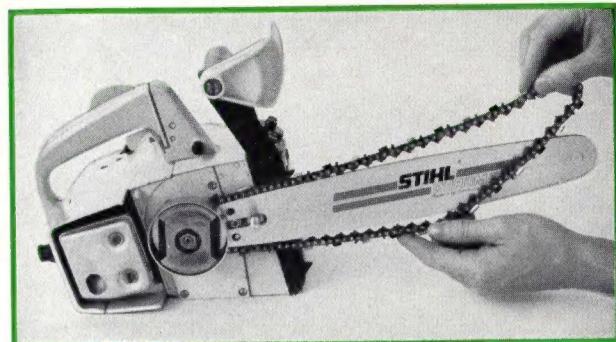
Your power chain saw comes with bar and chain unmounted.

To install the bar and chain, unscrew the hexagonal nut, holding the chain sprocket cover, with the combination wrench. Remove chain sprocket cover. Turn cylinder head screw of chain tensioning adjustment, which is positioned in the groove under the stud, counter-clockwise the move the tensioning bolt back in the direction of the chain sprocket.

**4** Place guide bar over stud and check to be sure that

Top: Placing saw chain

Bottom: Cutting edges pointing towards guide bar nose



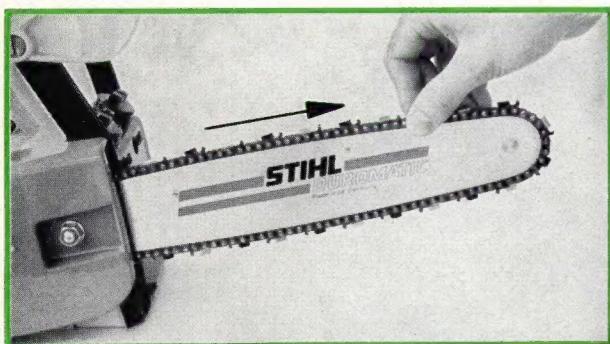
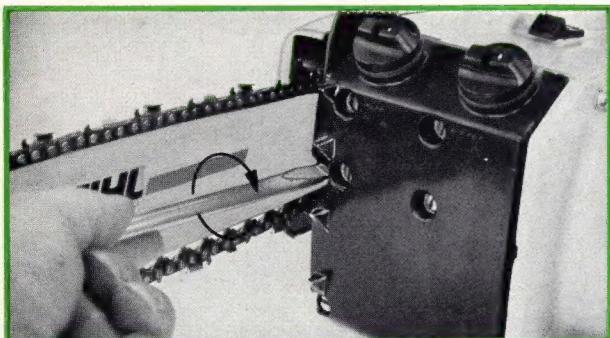
the bolt of the adjusting nut extends into the bottom hole of the guide bar.

Loop the chain over the chain sprocket and fit it into the bar groove with the cutting edges of the chain — at the top of the guide bar — pointing towards the bar nose.

Put chain sprocket cover back into place and tighten the nut only finger tight for the moment. Turn the cylinder head screw of the chain tensioning adjustment clockwise with the screw driver while holding the

## Fuel and chain lubricating oil

Top: Tensioning the saw chain  
Bottom: Checking the chain tension



nose of the bar upward until all slack has been removed from the chain at the bottom side of the guide bar.

Then tighten hexagonal nut still holding the nose of the guide bar upward.

**The chain has the proper tension when it can be pulled easily around the bar by hand, and shows no slack on the bottom side of the guide bar.**

The power head of the chain saw is a two-stroke engine which must be operated with a gasoline-oil mixture.

**For the gasoline-oil mixture use only regular gasoline and a good grade SAE 30 (non-detergent) oil or STIHL two-stroke motor oil.**

When using SAE 30 oil the correct mixing ratio is 1:25 (1 part oil to 25 parts gasoline).

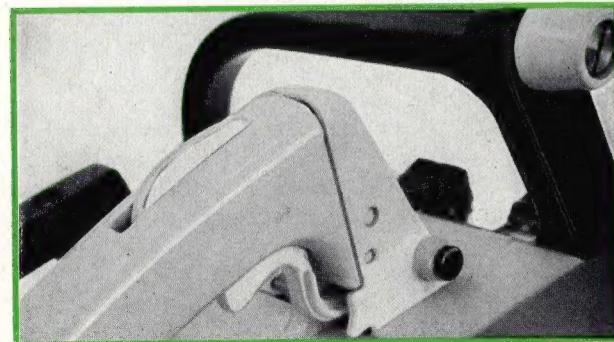
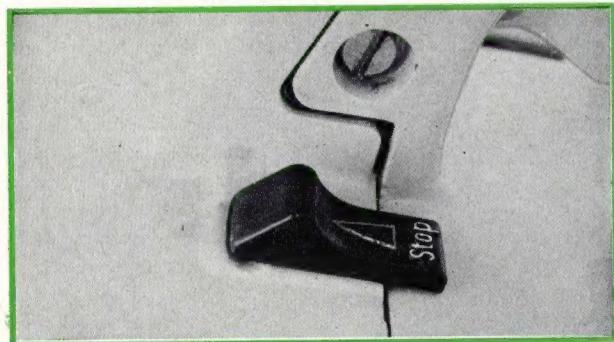
For the STIHL two-stroke motor oil a mixing ratio of 1:40 is sufficient! This gasoline-oil mixture produces less exhaust gases by a better combustion of the fuel, it leaves less carbon deposits in the combustion chamber, at the spark plug and in the muffler. You can purchase this oil, for the fuel-oil mix, from your STIHL dealer. **During the running-in period use a fuel-oil mixture of ratio 1:25 for the first five tank fillings.**

Don't forget to shake the fuel container with the fuel mixture thoroughly before refilling the fuel tank. In a saw which has been stored for a long time, the gasoline-oil mixture will have separated too. In this case you must thoroughly shake the saw before starting it.

The chain- and guide bar life largely depend on the quality of the chain lubricating oil. Use only the chain lubricating oil recommended by your STIHL dealer. Make it a rule to refill the chain oil tank every time you refill the fuel tank.

Clean the area around the fuel and oil filler caps before removing them and be careful not to let dirt fall into the tank when refueling or refilling chain lubricating oil.

Top: Choke shutter lever in starting position  
Center: Ignition stop switch on  
Bottom: Throttle trigger in half throttle position



## Starting

Place saw on ground. Try to pick a flat area so that the chain cannot touch any object or the ground. Make sure that all bystanders are at a safe distance.

### Starting the engine

1. The engine of the STIHL 015 and 015 L electronic chain saw should always be started with choke shutter closed. Move choke shutter lever to starting position — as far as it will go in the direction of the arrow pointing to "START".
2. To turn on the ignition stop switch, move switch as far as it will go in the direction of the spark plug.
3. Lock throttle trigger in half throttle position: On the model 015 L electronic fully depress throttle trigger interlock with the ball of your left thumb then depress the half throttle trigger button with your thumb. On model 015 just depress half throttle trigger button.
4. Hold front handle with one hand and pull starter grip slowly with your other hand until you feel the starter engaging. Then pull the starter grip with a smooth but rapid pull. Don't let starter grip snap back but guide it back into the starter housing to allow the rope to rewind correctly.
5. After the engine has started, pull throttle trigger in order to unlock half throttle lock button which will allow the engine to idle.

### Attention

**Leave choke shutter closed only until engine has fired once.**

Top: Starting  
Center: Throttle trigger in idling position  
Bottom: Ignition stop switch in "off" position

**Then open choke shutter fully — lever into horizontal position — even if engine should stop again and you have to pull the starter a few more times. If you don't open the choke shutter the combustion chamber will flood and the engine cannot be started.**

#### **A few more hints for starting:**

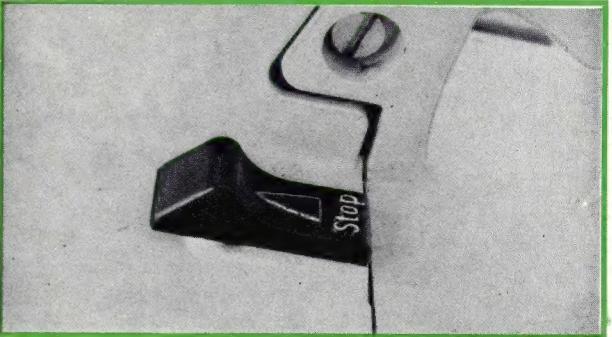
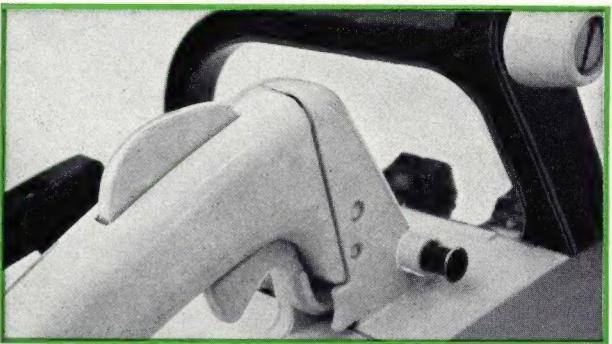
At low temperatures, after the engine has fired once, only open choke shutter half way. Then, when the saw starts, pull throttle trigger to full throttle for a short time to keep engine running until warmed up. Then open choke shutter fully.

If the engine should fail to start after you have opened the choke shutter then the combustion chamber is already flooded. In this case unscrew and dry the spark plug. Crank engine several times with spark plug removed to vent the combustion chamber. **While doing this the ignition stop switch must be switched off — in "stop" position — fully forward.**

A new engine, or one which has not been used recently, may require additional pulls until the diaphragm pump in the carburetor has drawn enough fuel into the carburetor.

#### **Stopping the engine:**

To stop the engine slide ignition stop switch fully forward in the direction of the arrow to "STOP" position.



## Safety Precautions

All safety precautions that are generally observed when working with an axe or a hand saw must also be observed when working with chain saws. However, because of the much faster cutting and the high speed of the saw chain there are additional safety precautions that must be kept in mind when working with any chain saw.

Observe all safety precautions of your local trade union under all circumstances! In addition to the instructions in the individual paragraphs of the instruction manual please observe the following points:

Everyone buying a chain saw for the first time should receive proper handling instructions by the salesman or should participate in a chain saw instruction course before using the saw!

Don't smoke when fueling and avoid spilling fuel. If you spill fuel wipe it off immediately and don't start the saw where you refueled it.

The STIHL chain saw is a one-man saw, therefore it is operated without assistance. No second person is allowed to stand within the operating area of the guide bar. Place chain saw on ground to start the engine.

Take care that the cutting attachment does not touch any objects or the ground. When starting the operator must look for a safe foot hold.

Before starting check the chain saw for proper function (throttling, ignition stop switch).

Never carry the saw with the running chain.

Place chain guard on the chain when carrying the saw. Carry the saw with the guide bar to the rear when climbing up hill and to the front going down hill.

Keep both hands on your saw when cutting in order to have positive control of the saw at all times.

First place bumper spike firmly against the wood, then start cutting. If you cut without a bumper spike be careful that the saw does not jerk forward and make you loose your balance. Draw the saw out of the cut only with the chain running.

Work calmly. Before making the felling cut make sure no one will be endangered by the falling tree.

Always handle the chain saw in such a way as to keep your body clear of the reach of the cutting attachment. When working in groups the next worker must be at a safe distance (at least 2 1/2 tree lengths) from the tree to be cut. Calls can be easily overheard by the noise of the engine.

Always stand aside of the falling tree when felling, then only step back sideways and watch for falling branches. The operator must look for a safe escape path.

Use only wooden-light metal or plastic wedges, never use steel wedges.

If an assistant has to push the tree to be felled, a pushing fork of sufficient length must be used.

Beware of flying splinters when cutting split timber.

Use safety chain when limbing and for cutting jobs where mainly plunge-cutting is done.

Pay particular attention on slippery ground, also on hillsides.

When felling on a slope and when cross-cutting lying trees on a hill the chain saw operator must always stand on the uphill side of the tree.

Wood on the ground or standing timber which is under tension has first to be cut on the compression side. Thereafter the cross-cut must be done from the tension side. Otherwise the bar will pinch or the saw may suddenly kick back.

Wear a safety helmet when felling. We recommend helmets with eye protection (against splinters). Garments should be adequately protective i. e. trim fitting gloves (chrome leather), snug fitting garments (overall, no coat) and shoes with nonslip soles.

Protect your ears by ear plugs or other ear protections. Always watch for proper tension, lubrication and sharpness of the saw chain.

When checking the chain tension or when readjusting and changing the chain the motor must be stopped.

## Bar and chain

Guide bar with oil inlet boring



### Guide bar

Avoid a one-sided wear of the bar. Therefore turn guide bar every time you sharpen the chain. But also clean oil inlet boring and bar groove at regular intervals.

### Chain lubrication

Never work without chain lubrication! Check chain lubrication for proper functioning every time you start cutting. To do so hold chain saw with cutting attachment over a clear spot. If an increasing oil film shows during moderate throttling the chain lubrication works satisfactory. Attention, the saw chain must not touch the ground.

### Breaking-in the saw chain

Let new saw chain and every new spare chain run without cutting a short time (2—3 minutes). An ample lubrication during this time is important. Check chain tension after break-in.

Controlling the chain lubrication



### Checking the chain tension

Make it a rule to check the chain tension at stopped engine every time you start cutting. The chain has the proper tension when it has a snug fit at the bottom side of the bar in cold operating condition and when it can be pulled easily around the bar by hand.

**Attention:** Don't get injured by the sharp cutters. If a warm chain is sagging at the bottom side it must be retensioned. A new chain must, of course, be retensioned more often than a chain being used already for some time.

### Chain sprocket

The chain sprocket must stand a high stress. If the chain teeth show a considerable wear the sprocket must be replaced. A worn sprocket decreases the service life of the saw chain. The chain sprocket has to be replaced after the wear of 2 chains. The most economical way is to use two new chains alternately on one sprocket.

## Handling the chain saw

Top: How to place spiked bumper against log to start cutting.  
Bottom: Moving saw down to a new position in cut.



Be sure of safe footing when operating your chain saw and hold saw firmly with both hands in order to have it under control all the time. Never let the running chain touch the ground, it will dull immediately.

### The most common chain saw cutting techniques

Place spiked bumper cast to the front housing, against the log. This is the best way to cut a big log or large square timber correctly.

Plunge cut used for notching



Do not let the chain touch the wood. First speed up the engine, then pivot the guide bar through wood by pulling up on the rear handle grip with one hand (spiked bumper = pivot point) and guiding the saw with the other hand holding the front handle.

In a few cases one cut will be sufficient, that means that many times the saw must be changed to a new position for continuous cutting: Hold the chain saw out of the cut a little bit as you continue cutting. Use full throttle and exert a slight pressure on the handle bar. Then push spiked bumper down to new position, continue pivoting, but make sure to idle the engine when you have finished the cut.

### Do not race the engine between cuts!

With the chain saw it is possible to cut exact angles, or you can bore into the wood with the nose of the guide bar to cut out notches. Begin the boring cut with the bottom side of the guide bar tip, speed up the engine before the chain touches the wood.

With the STIHL 015 and 015 L you can also prune or fell smaller trees. For these jobs a few hints:

### Cutting a branch on a live tree



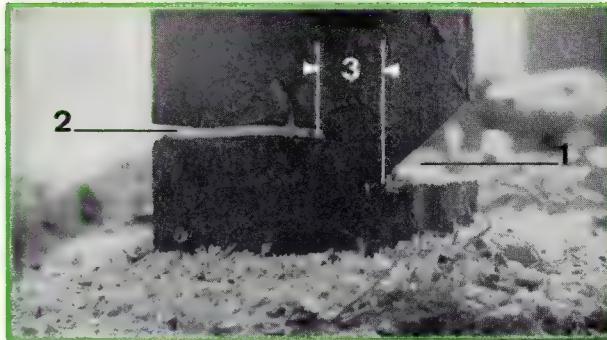
To cut a branch on a live tree start the cut from top to allow the branch to brake downward. To prevent the branch from splitting and the bark from cracking, first make an undercut. If you have to fell a tree, first determine the direction in which the tree should fall and clean out undergrowth in the immediate cutting area. Sand, stones and other foreign objects will dull the saw chain. If necessary remove the bark from around the tree where it is to be cut.

The direction of fall is controlled by the **notch**. Notch the tree as low as possible and at a wide angle to the direction of fall. The notch should be about 1/5 of tree diameter and should never be higher than its depth.

Notch the tree as exactly as possible. Make the felling cut exactly horizontally and higher than the base of the notch.

Place the bumper of the saw against the log directly behind the hinge and pivot the bar through wood around this pivot point.

Top: 1 = Notch  
2 = Felling cut  
3 = Hinge  
Bottom: Direction of fall

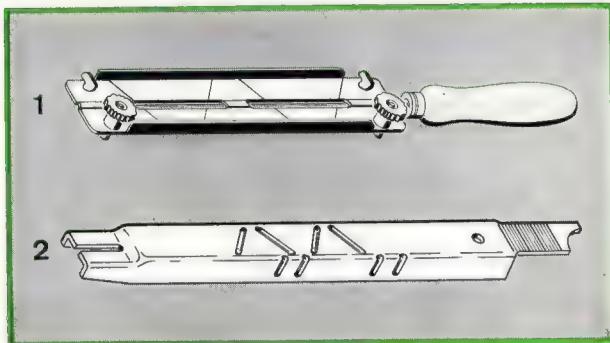


The **hinge** is the small uncut section between the notch and the felling cut which brakes when the tree begins to fall and which acts as a hinge to guide the tree in the direction of fall. It should be about 1/10 of tree diameter. Don't cut through the hinge otherwise the direction of fall can no longer be controlled.

**Step aside when the tree begins to fall and beware of falling branches. Observe all safety precautions!**

## Sharpening and maintenance of saw chain

1 = STIHL file-holder  
2 = STIHL filing gauge



A properly sharpened chain guarantees many advantages: Smooth cuts, higher cutting efficiency and therefore less power required for cutting and lower fuel consumption.

### Sharpening the saw chain

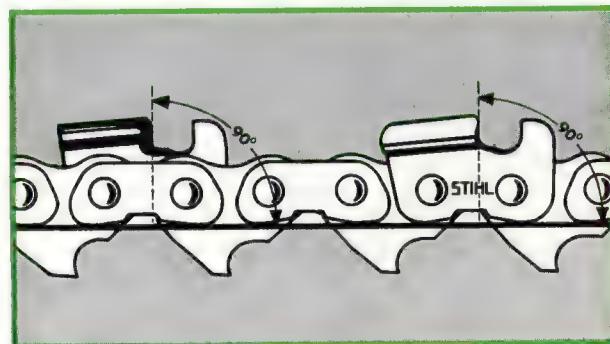
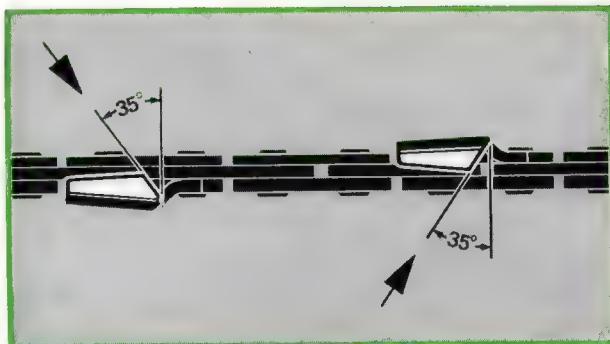
If you wish to sharpen a dull saw chain yourself you must use a special chain file which you can get as an extra from your STIHL dealer.

First look for the shortest cutter which you may find with the sliding gauge. Sharpen this cutter first and then all the other cutters must be filed back to the same length.

### Top plate angle

Your saw chain is a chipper chain and has a top plate angle of 35 degrees. This angle must be maintained on all cutters because different top plate angles will cause chain chatter and undue wear or even breakage of the chain.

Top: Top plate angle  
Bottom: Side plate angle



### Side plate angle

The cutters of the chipper chain have a side plate angle of 90 degrees. To obtain this side plate angle of 90°, put your file in a STIHL file holder to sharpen the cutters.

Top: Guiding the file  
Center: Depth gauge setting  
Bottom: Checking the depth gauge setting with the filing gauge

### **File the cutters only from the inside to the outside**

Hold the file parallel with top plate of cutter and add a 90 degree angle to the side plates of the cutter. Use firm, long even strokes applying pressure on the forward stroke away from you. Excessive filing pressure results in undue wear of file and a weak razor edge. Clean off burrs at the cutting edge with a piece of hard wood.

### **Depth gauge**

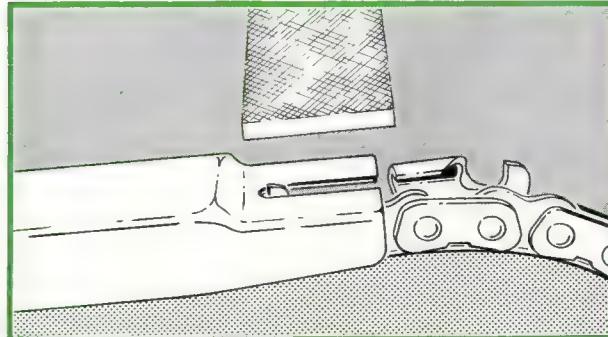
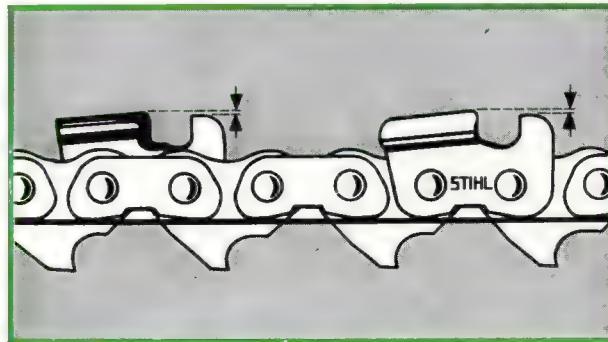
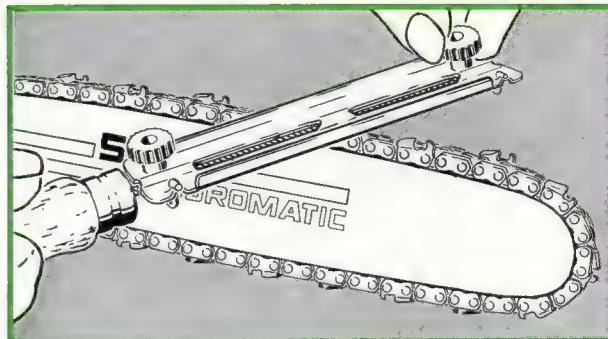
The depth gauge controls the depth of cutter bite. As the top plate of the cutter is somewhat inclined to the rear the depth gauge setting is changed when the cutter is filed back. Therefore, check depth gauge setting every time you sharpen the chain.

### **Check the depth gauge setting with the STIHL filing gauge!**

Place filing gauge on saw chain. File projecting depth gauge level with filing gauge and round off leading edge of depth gauge which points in the direction of engine rotation.

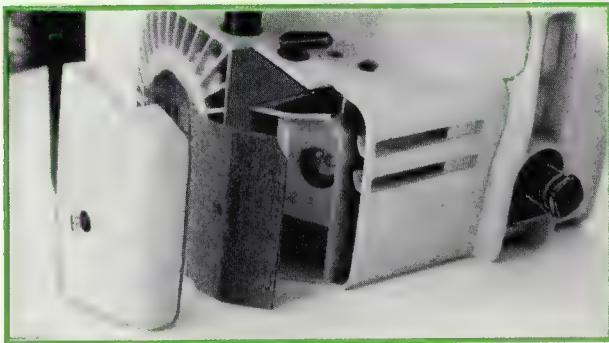
### **Installing new chain links**

Broken, damaged or worn chain links must be replaced. Beside the routine maintenance it is better not to repair your saw yourself: Replacing the chain links should be done by your nearest STIHL dealer.



## Air filter

Disassembly of air filter



The air filter is designed to retain the dirt in the air, which is sucked into the engine, in order to reduce the wear of the moving parts.

A dirty air filter will cause a loss in the power of the engine, it will increase the fuel consumption and make starting more difficult.

### Therefore clean air filter daily!

Close choke shutter before removing the air filter in order to prevent dirt from entering the carburetor, which is positioned behind the air filter. Loosen the cylinder head screw with the combination wrench and remove the cover and the air filter which is a felt "plate".

To clean the air filter tap filter lightly onto the palm of your hand dirty side down or clean it with a soft brush and then wash it in straight gasoline.

If air filter is badly clogged it must be replaced by a new one because even a careful cleaning will show only temporary results.

## Carburetor

H = High speed adjustment screw  
L = Low speed adjustment screw  
LA = Idle speed regulating screw



The carburetor of your chain saw has been carefully adjusted at the factory for maximum performance under average atmospheric conditions. When working at high altitudes or near sea level the carburetor, however, may need readjusting. Check carburetor adjustment with warm engine and a clean air filter.

**Normal adjustment of carburetor: (Turn adjustment screws in carefully until they are seated).**

**High speed adjustment screw (H):**  $\frac{3}{4}$  of a turn open  
**Low speed adjustment screw (L):**  $\frac{3}{4}$  of a turn open

**Engine stops when idling:**

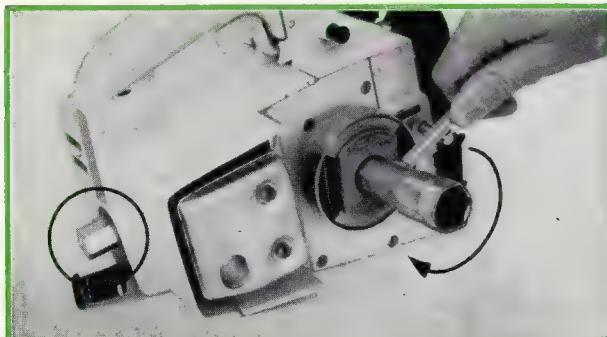
With engine running turn idle speed regulating screw (LA) clockwise (the chain should not turn at idle speed).

**Chain turns when engine idles:**

Turn idle speed regulating screw counter-clockwise.

## Replacing the chain sprocket

Top: Wind starter rope around handle frame  
Bottom: Unscrewing the clutch (locking the crankshaft with the crankshaft locking screw first)

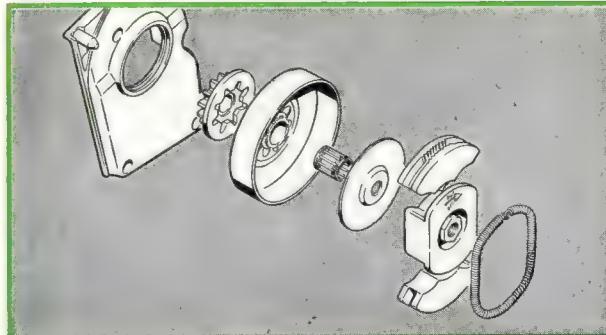


Pull starter grip out about 12 inches (30 cm) and wind rope end around the handle frame to prevent breakage of rope when clutch is installed later.

Remove chain sprocket cover and cutting attachment. Pull off spark plug terminal and unscrew spark plug with combination wrench. Screw crankshaft locking screw into spark plug hole by hand to lock the crankshaft.

**Attention: The clutch has a left hand thread! Therefore, unscrew it by turning it clockwise.**

Disassembly of clutch and sprocket



Loosen clutch with the combination wrench (SW 13) and remove it. The clutch shoes are held in place by a retainer washer behind the clutch. When properly installed the projecting rim of the retainer washer must point towards the clutch carrier. Now remove retainer, chain sprocket and needle cage from crankshaft.

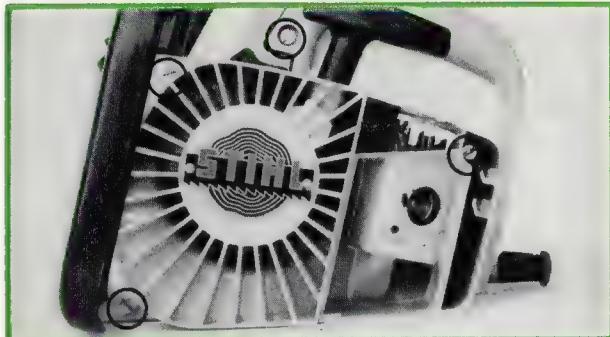
Before reassembling the parts, wash needle cage in clean gasoline and lubricate it with some ball bearing grease.

Then put needle cage, chain sprocket and clutch retainer (make sure to install correctly) back into place on crankshaft. Screw clutch onto crankshaft by hand. Unwind starter rope from handle frame and hold it with your left hand. Now tighten clutch with the combination wrench until piston bottoms on the crankshaft locking screw, at the same time let starter rope glide back slowly.

Now tighten clutch securely and reinstall the other parts by reversing the disassembly sequence.

## Rewind starter

Top: Loosen the 4 cylinder head screws holding the handle case  
Bottom: Prying off the retaining washer



To install a new starter rope remove starter lever and spark plug terminal carefully. Unscrew spark plug.

Remove cylinder head screw holding the filter cover. Remove cover and air filter. Unscrew the 4 cylinder head screws holding the handle case.

Pry retaining washer off the starter shaft. To prevent the rewind spring from jumping out when removing the rope rotor, lift off rope rotor to a point when it is about 4 in. (1 cm) off its seat on the starter shaft. Then put

Pushing back the rewind spring



screw driver end of combination wrench through the rope guide hole in the handle case and push the rewind spring, with the screw driver, back into its seat and hold it there. Now remove rope rotor from starter shaft.

Remove the remaining piece of the old starter rope. Thread in a new rope of 38.4" (96 cm) length and secure it in the rope rotor with a single knot. Thread other end of rope through rope guide hole in handle case and secure it in the starter grip with a double knot. Put rope rotor back into place on starter shaft first applying a few drops of oil to the shaft and secure it with the retaining washer.

Make sure that the recess in the rope rotor is correctly positioned over the inner eye of the rewind spring.

### Installation of rewind spring

A broken rewind spring can only be replaced by a new one. The new rewind spring is secured by a wire coil ready for installation.

Top: Rewind spring hooked into lug  
Center: Winding the starter rope onto the rope rotor  
Bottom: Starter rope drawn back through the recess

The outer spring loop of the spring is hooked onto the retaining lug of the spring seat in the handle case. The wire coil is automatically removed when inserting the spring into its seat.

If rewind spring should uncoil and jump out while inserting it, recoil it into seat starting with the outer loop and ending with the inner loop. Apply oil sparingly to the inserted spring. Put the rope rotor into place and install the retaining washer. Tension rewind spring.

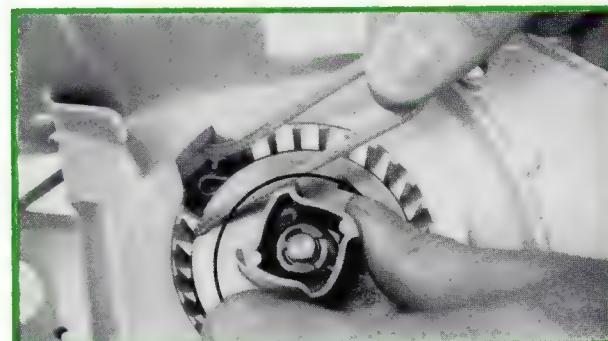
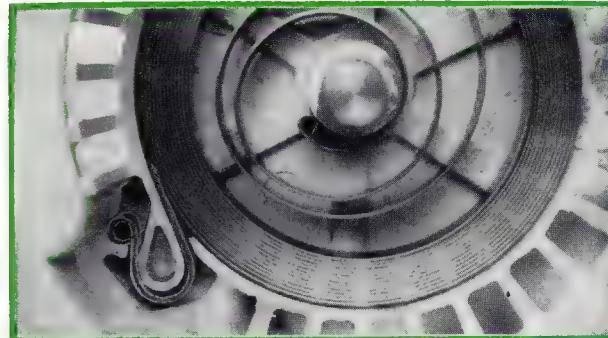
#### **Tensioning the rewind spring**

Wind starter rope onto rope rotor by turning the rope rotor counter-clockwise. Pull the cord out about 12—16 inches (30—40 cm) and hold the rope rotor.

The outer side of the rope rotor is provided with a notch. Pull starter rope back and shape a loop of the starter rope still holding the rope rotor while doing this! Now turn rope rotor clockwise 3—4 times. But don't allow the starter rope to wind onto the rope rotor. Hold rope rotor with one hand again and pull starter rope back through the rope guide hole into the handle case with the other hand. Now release rope rotor slowly. By the pretension the rewind spring has by this procedure, the rope will now wind itself automatically onto the rope rotor.

The rewind spring is correctly tensioned if starter grip is pulled up against the housing and does not hang down and if rope rotor can still be turned one full turn before reaching maximum spring tension with starter rope pulled out fully.

**Excessive spring tension will cause breakage of the spring!**



## General maintenance

To increase the life span of your chain saw you must give it thorough care and maintenance.

At the end of each working day clean the saw dust and dirt from the saw. Moreover, clean guide bar, saw chain and air filter and check condition of these parts.

If you let saw sit idle for a long time you should protect the engine against corrosion with a rust inhibitor in addition to the routine maintenance.

However, the rust inhibitor will properly protect the engine only if you inject it into the carburetor while engine is running. Stop the engine while injecting the oil with an oil can. A special rinsing is not necessary.

If the saw is left idle for a long time the oil will separate in the gasoline-oil mixture. Therefore, before restarting the engine shake saw thoroughly. If engine does not start, spray some gasoline over the air filter.

Store the chain saw in a dry place.

Rinse the fuel tank with clean gasoline every 50 operating hours.

The lubrication of the cutting attachment should never be interrupted. If this should happen clean oil inlet hole at rear of bar and clean out bar groove if clogged.



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